## FROM PRACTICE



# Floodplain meadow partnership: A working model of effective communication between practitioners, academics and policymakers

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### **Abstract**

- 1. The article describes a model system for facilitating the transfer of knowledge between researchers and practitioners.
- 2. The system described has a focus on a single habitat, floodplain meadows, and a case is made for replicating the model for other habitats.
- 3. Even a single habitat has a wide variety of stakeholders, but a focused partnership with representation across the stakeholder community can prove a useful vehicle for disseminating knowledge and best practice.
- 4. The structure of the partnership is set out from a steering group to local representatives, and the division of tasks between specialists is explained.
- 5. The partnership is UK-based and UK-focused, yet has an international dimension.
- 6. The longevity of the partnership and the intensity of interaction with stakeholders are concluded to be important and suggested as a model for others to follow.

### **KEYWORDS**

floodplain meadow, habitat conservation, outreach coordinator, research coordinator, translational ecology

## 1 | INTRODUCTION

The challenge of communicating ecological research to practitioners is widely recognized (e.g. Jackson et al., 2017; The Great Divide, 2007). Policymakers and practitioners would like scientists to appreciate their practical needs (Bainbridge, 2014). Research papers published in peer-reviewed journals and written in academic language rarely influence the way policymakers or practitioners navigate their decisions and practice (Anderson, 2014; Hulme, 2011). A range of factors causing gaps between academic knowledge in ecology and its application in policies and site management have been identified and discussed (Anderson, 2014; Hulme, 2011; Jackson et al., 2017; Pullin & Knight, 2003; Sutherland et al., 2004; The Great Divide, 2007). A need for a 'translational ecology' approach was advocated by Schlesinger

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and developed into a special area of ecological expertise (e.g. Enquist et al., 2017; Schlesinger, 2017). This is arguably different from 'adaptive management' and applied ecology in general (Zedler, 2018), but the issue of there being a lack of or ineffectiveness of communication between ecologists and stakeholders still persists (Coreau et al., 2018).

There have been some initiatives to help bridge the science-to-practice gap. Ideas of knowledge co-production by researchers, stake-holders and funding organizations have been explored (e.g. Lemos et al., 2018). The Society for Ecological Restoration, the Conservation Evidence team and the Centre for Evidence-based Conservation encourage practitioners and academics to share research and management experiences. By its nature, however, the scope of these initiatives is broad. A more targeted model of interaction between scientists and managers, academics and policy makers, is the UK-based Floodplain Meadow Partnership (FMP) (http://www.floodplainmeadows.org.uk/), which focuses on a very specific habitat – floodplain meadows. This article aims to describe the development of the partnership and its operation to provide a potential model for those interested in other ecological systems.

European floodplain meadows are semi-natural ecosystems; some of which have been managed for more than a thousand years (McGinlay et al., 2016). They support increasingly scarce plant communities and are valued as breeding areas for ground-nesting birds, such as the Eurasian curlew (Numenius arquata). The purpose of the FMP is to support effective conservation of these dynamic and biodiverse ecosystems, which suffered severe declines across Europe during the past century, largely as a result of agricultural intensification (Jefferson & Pinches, 2009; Krause et al., 2011). A series of research projects investigating the hydrological niche as a driver of biodiversity (Silvertown et al., 1999; Garcia-Baguero et al., 2016), gave rise to a baseline of monitoring programmes on the few remaining, protected sites in the United Kingdom. The wealth of data collected on these model meadows was presented for promotion of their conservation through practitioner-focused publications (e.g. Wheeler et al., 2004). At the same time, the challenges of implementing research findings into conservation practice were realized. The main barrier was a lack of awareness about research publications among the practitioners (e.g. Pullin & Knight, 2005). A second challenge arose because the management and conservation of the remaining floodplain meadows is undertaken by a diverse range of stakeholders: from statutory organizations to charities, private companies, private landowners and community groups. Such diversity was reflected in a mixed response about necessity of implementation of recommendations coming out of the research papers. Many practitioners, and land managers lack the confidence to translate the information presented in a scientific article. To overcome those barriers, the necessity for specific efforts to translate academic knowledge to practitioners was recognized.

The FMP model seeks to ensure effective communication between academics, practitioners and policymakers. This paper sets out the main principles of FMP's work and its 14 years of experience in the translation of fundamental studies relating to the ecology of floodplains meadows, into a language with which stakeholders and the general public can engage. The Partnership has the dual aim of improving

the management of a unique habitat and promoting the appreciation of its economic and cultural roles, both past and present.

### 1.1 | FMP communication model structure

The first step in developing an effective Partnership is to identify the key roles and the main players in research, management and policy, then structuring their relationships (Figure 1). The FMP is hosted by The Open University, a key holder of floodplain meadow research data and academic expertise. The most appropriate mechanisms for the transfer of academic knowledge into practice were identified by the Steering Group, which sets objectives and project direction, and acts as an information facilitator. It is composed of representatives from major stakeholders including statutory, non-governmental, research and educational organizations.

For everyday management of the FMP, the Outreach and Research Coordinators are employed by the Open University, and funded by charitable foundations. It is this dual coordinator role that has proven to be a key to the successful running of the FMP, enabling multiple relationships to be managed simultaneously (Figure 1).

The outreach coordinator role was initially to approach meadow managers, conservation advisors and landowners proactively, to share research findings and determine current issues affecting management and restoration of floodplain meadows. The first task was to build a network of practitioners and stakeholders through site visits, direct phone and email correspondence, running workshops and presenting at conferences. More than 1000 contacts were made in first 3 years; and the network has developed more than 4000 contacts over the time of project. Through this networking, the outreach coordinator has been able to increase stakeholders' *awareness* of the ecohydrological and botanical expertise available to them, enabling practical questions to be addressed. A variety of channels were used to develop and support the network (Figure 1, Table 1).

Once collated from these various channels, questions and issues raised by the various stakeholders are passed to the research coordinator, who may either seek to address them from existing information or by organizing relevant site surveys where resources allow, and then reporting back directly to site managers. This sitemanagement/research loop has enabled FMP to build a reputation for providing an authoritative point of contact across a wide circle of practitioners. Moreover, a very effective tool for building up the FMP's reputation as the primary point of contact for any projects involving floodplain meadows, is the use of conferences with international participation, specifically organized for a wide range of stakeholders. These meetings facilitate face-to-face contact between practitioners and researchers, which allow strong relationships to develop. The practitioners have an opportunity to obtain evidence-based and habitatfocused information directly from researchers, and to discuss the implications for their own sites, that have served to increase trust and confidence between managers and researchers.

Awareness and confidence enable knowledge transfer to become knowledge application. In the FMP model, knowledge application is

# **FMP Communication Model (2008-2021)**

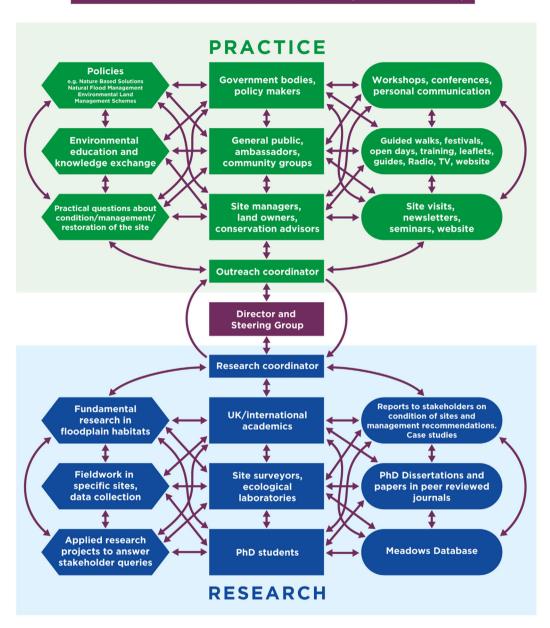


FIGURE 1 The FMP research-to-stakeholders communication model

evidenced through changes in site management, conservation objectives and practitioner confidence. A questionnaire from 2020 showed that 87% of landowners and practitioners out of 100 questioned, said they had changed their approach to management at their site as a result of the FMP guidelines, and 92% said their involvement with the FMP had encouraged them to build up personal expertise about floodplain meadows. This three-step ACA approach (awareness, confidence, application) allows the FMP network to grow consistently.

The Partnership then plays a key role in monitoring the effects of change such that an evidence base is accumulated for use in future projects, and freely available from the FMP website. The FMP website, with almost 45,000 unique visits over 14 years, is a very popular mech-

anism by which practitioners access information. The extent of the content has expanded over this time, and the meadow map has proved useful as a mechanism of maintaining a public-facing inventory. Meadows for which monitoring data are held are marked on the website, giving any stakeholder who has not already been engaged with the Partnership, the opportunity to access available data from local sites (particularly useful when a practitioner relocates to a different area). The variety of information on the website is co-created by issues raised in questionnaires and discussions with practitioners. Keeping an updated, expertly curated central repository for case studies and research in this area seems important – finding and accessing information can be a barrier for practitioners (e.g. Pullin & Knight, 2005).

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**TABLE 1** A summary of outreach activity by the FMP over a fourteen-year time frame

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Outreach activity (2008-2021)	Number of events (numbers of people reached through activities)		
Presentations at conferences	71 (4658)		
Site visits	298 (979)		
Guided walks	44 (1286)		
Open days	24 (9994)		
Training workshops	42 (1197)		
Volunteer activities	120 (974)		
Website visits	69,319		
PR articles	50 (19,000,000+)		
Newsletters produced	24 (distribution list 1200+)		
Ambassadors trained	47 ambassadors, 33 counties, 38 organizations		
Handbooks distributed/sold	1000+ sold/distributed (three print runs)		
Community groups engaged with	30		
Case studies made publicly available via website/ handbook	70		
Consultancy contracts delivered	76 (19 different organizations)		

Newsletters are produced twice a year, written by the FMP team, with content and ideas sought from the Steering Group and practitioners. Content covers general news about the Partnership, the wider sector and more extended technical articles covering pertinent topics, such as 'When to cut a meadow?' and 'What do I do in a wet summer?' These are used by nature conservation organizations as general guidance on how to manage floodplain meadows (Richard Jefferson, personal communication, July 2018).

In addition to the direct and online forms of communication described above, the Partnership experimented with a novel form of facilitating communicating between stakeholders in 2015, called FMP ambassadors. The idea was to equip a group of highly motivated volunteers from across the country with the information and skills needed to underpin two-way communication between stakeholders and the wider Partnership at a local level. Each of the volunteers, termed FMP ambassadors, were allocated a county as an area to support practitioners. Over 2 years, trainee ambassadors are asked to commit 1 day a month to undertake a detailed study of a floodplain meadow site of their choosing. Personal involvement in data collection and analysis equipped ambassadors with knowledge interpretation skills. Overall, 47 FMP ambassadors are now available to provide meadow management advice in their geographical areas and some are developing wider floodplain meadow restoration projects (e.g. Steve Beale & Caroline O'Rourke, personal communication).

As a direct impact of FMP communication of ecological knowledge to practitioners, changes to site management have occurred. Two examples are (1) a ditch was re-instated on Portholme Meadow Spe-

cial Areas for Conservation (SAC), Cambridgeshire, constructed by the Environment Agency and (2) diversification of floodplain meadow communities at Clattinger Farm and Priors' Ham (Wiltshire), which achieved their goals aided by a combination of monitoring and responsive management, facilitated by regular communication between researchers and site managers.

Communication with policymakers has predominantly occurred through Steering Group members. In 2014, for example, the 'Guidelines to selection of biological SSSIs' were changed to expand the range of plant communities that can be considered for legal protection as a result of FMP research and engagement. Attempts to influence Government Policy directly from the Partnership have recently started, with an advocacy officer being employed to enhance the new Environmental Land Management Scheme, and other relevant government policies on floodplains, flood management, nature conservation, water and agriculture.

The outreach coordinator role has been critical in building a network of people with an interest in the target habitat. The extent of the outreach activities delivered by the Partnership over the past 14 years is summarized in Table 1.

The research coordinator role has involved maintaining and transferring a wealth of knowledge built up by the research group at the Open University and its collaborators into the Meadows Database. The Meadows Database was developed as a repository for data collected by both long- and short-term monitoring projects on floodplain meadow sites around the UK. Annual monitoring of vegetation was conducted at the five sites designated as SAC's for the Lowland Hay Meadows habitat (6510) under the European Habitats Directive. Long-term monitoring provided the baseline, verification and reference data for numerous other meadow projects, including restoration schemes.

Annual reports produced by FMP on vegetation and hydrology at particular sites provide key links between research and management. Such reports ensure that research outcomes are shared directly with stakeholders. Letters containing management recommendations, sent to practitioners after FMP visits to their sites, are another key mechanism for increasing effectiveness of researcher-practitioner communications (McGinlay et al., 2016). This site-based approach to research has effectively removed two major factors that often create a gap between ecological research and its application: small-scale plots verus large-scale application and site-specific results verus generalizations (Anderson, 2014). Evidence-based and site-specific information has ensured adaptive conservation management (Zedler, 2018), which maximizes the chances for a healthy ecosystem to persist or be restored. Extracting relevant evidence and applying it to site-based decision making is key and often challenging (e.g. Christie et al., 2020; Pullin & Knight, 2005). Having experts to support and inform this is very important.

To address issues raised by practitioners, two types of research are carried out. First, site-based research gives direct evidence-based answers about specific sites and their management; second, PhD and MPhil projects collect observational and/or experimental data from multiple sites to answer more generic issues. Overall, over 100 observational surveys on 12 different sites and four randomized, controlled

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trials across seven sites have been conducted as part of management and restoration trials over the past 14 years. Nine PhD projects and one MPhil project have been successfully completed. The findings from these applied studies have been successfully translated into management practice at the sites where the trails were conducted: double hay cuts as a tool for managing biodiversity (Newman, 2014), Clattinger Farm and Priors' Ham restoration trails (Hosie et al., 2019). The findings were also disseminated within the stakeholders' network via summary articles in FMP newsletters, on the FMP website and at FMP conferences.

Fundamental research has also been orientated to the needs of practitioners. For example, work on refining the classification of floodplain-meadow plant communities was undertaken to support policymakers and practitioners who routinely use the National Vegetation Classification (Rodwell, 1992) for site assessments and management. This work has been published in a report for Natural England and used in the revision of the lowland grasslands chapter of the *Guidelines for Selection of Biological SSSI's* (Jefferson et al., 2014). In this example, FMP research reached practitioners via a key stakeholder for nature conservation in England and member of the FMP Steering Group.

One of the most effective links between research and practitioners is Floodplain Meadows; Beauty and Utility: A Technical Handbook (Rothero et al., 2016). This publication translated scientific information about floodplain-meadow ecosystem processes into an accessible, richly illustrated document for a broad range of stakeholders involved in floodplain-meadow management. Over 1000 hard copies have been distributed to date, and the handbook is also freely available from the website. Through the use of case studies, the handbook reported on a wide range of management trials considered to be of value to practitioners. Such case studies prove popular with a wide range of practitioners and bridge the gap between research and management in a most effective way, offering a very powerful tool which can be widely used in translational ecology.

# 1.2 What makes the FMP project a good working model of communication of ecological knowledge to stakeholders?

The FMP has engaged with stakeholders at many different levels, from volunteers and community groups, landowners and managers, to national policy advisors, with the same key messages about management, restoration and value of floodplain meadows, derived from FMP research data and habitat-specific expertise. The key messages were clear and concise, fitting the key specifications of successful communication of research into practice (Zedler, 2018).

The FMP model focuses its work on the target habitat as seen elsewhere (e.g. Alexander & Allan, 2007); research knowledge is transferred to practitioners often on a one-to-one basis, but sometimes via more formal events. This habitat-focused approach allows staff to communicate effectively with a large proportion of relevant managers.

The FMP can be regarded as a model of the ACA process. The partnership has raised *awareness* of the habitat and its issues, run

training and other outreach activities to increase *confidence* amongst practitioners and supported the *application* of new knowledge by practitioners to their own sites and organizational objectives.

Despite criticism (e.g. Zedler, 2018), the term 'translational ecology' (e.g. Enquist et al., 2017) quite accurately identifies one of the main issues in research-to-practitioner communication. Research publications use technical, statistical and specialist vocabulary, which is often difficult for practitioners to assimilate. Practitioners do not have access to scientific literature or time within their practically focused roles to find and read scientific papers; therefore summarized and focused information is highly desirable (Matt Johnson, personal communication.). The non-academic background of the FMP's outreach coordinator has helped to communicate information about complex issues in an accessible way, appreciating the pressures and realities that people in non-academic, practitioner roles face. These skills help meaningful relationships to develop longer term. The ability to talk equally, meaningfully and genuinely with a wide range of different stakeholders about the same subject, but in different ways, is key to such relationship building.

Issues raised by ecological research are too often ignored by both stakeholders and policymakers (The Great Divide, 2007). FMP Steering Group visits included meeting both practitioners and academics from the regions outside of the usual range of FMP activities. An FMP trip to the Outer Hebrides (Scotland) in 2018, for example, facilitated a new focus on wet grasslands in these islands, highlighting their conservation significance in a UK context. That event promoted an initiative of NatureScot to intensify their interaction with the local crofters (Helen Doherty, personal communication). In Russia, FMP presentations illustrated the value of the habitat to practitioners and politicians in two different regions, bringing an enhanced appreciation of the habitat to the local authorities. The FMP model of effective communication was valued by both ecologists and practitioners in all the countries visited (e.g., Matthias Harnisch, Victoria Teleganova, & Natalia Savinikh, personal communication). We believe the model has the potential to be applied to other habitat types, landscape features and agricultural practices across the world.

# 2 | CONCLUSION

Through its targeted investigation of a defined habitat, the FMP has become a first point of contact for developments relating to floodplain meadows in the UK. By exemplifying the translational ecology approach down to the level of a single habitat type, it has led to the improved application of research. The success of the FMP as a model of communicating ecological knowledge has largely been down to the outreach and research coordinators' capacity to operate effectively within their boundary spanning roles, providing informed outreach to a wide range of stakeholders and policymakers. Another key to the success of the FMP initiative lies in the longevity of the project. A timescale of 14 years, with continuity of staff, has provided the opportunity to build and extend a nationwide network of relationships, ensuring that stakeholders become aware of the relevant ecological knowledge and

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expertise available. Finally, the steering group, representing a wide range of stakeholders, has helped to identify the direction of the project from the beginning, ensuring its work is of relevance to the audience.

Experience of running the Partnership has suggested that other groups interested in following the model should ensure they can achieve clear messaging about a specific habitat, sustain the focus for >5 years and select staff who can use an outward-facing engagement approach. This combination has established a centre for excellence in both academic and engagement terms. Repeated questioning of the practitioner cohort to understand their requirements is crucial to ensure the messages are relevant and applicable.

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The authors declare no conflict of interest.

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IT and ER conceived the initial idea for the article and wrote the text, DG, RJ and AS commented in detail on the first draft. All authors contributed critically to the completed draft and gave final approval for publication.

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# PEER REVIEW

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